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U-004-306 .27

**RESPONSES TO THE US EPA AND OHIO EPA COMMENTS ON THE
WORK PLAN, GEOTECHNICAL SAMPLING AND TESTING AT THE
SOLID WASTE LANDFILL AND PROPOSED ON-SITE WASTE
DISPOSAL CELL FOR OPERABLE UNIT 2**

03/09/94

DOE-1118-94
DOE-FN EPA
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RESPONSES



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Department of Energy
Fernald Environmental Management Project
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MAR 09 1994
DOE-1118-94

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Mr. James Saric, Remedial Project Director
U.S. Environmental Protection Agency
Region V - 5HRE-8J
77 W. Jackson Boulevard
Chicago, IL 60606-3590

U-004-306.27

Mr. Graham Mitchell, Project Director
Ohio Environmental Protection Agency
40 South Main Street
Dayton, OH 45402-2085

Dear Mr. Saric and Mr. Mitchell:

**RESPONSES TO UNITED STATES ENVIRONMENTAL PROTECTION AGENCY AND OHIO
ENVIRONMENTAL PROTECTION AGENCY COMMENTS ON THE WORK PLAN, GEOTECHNICAL
SAMPLING AND TESTING AT THE SOLID WASTE LANDFILL AND PROPOSED ON-SITE WASTE
DISPOSAL CELL FOR OPERABLE UNIT 2**

Enclosed are the responses to the United States Environmental Protection Agency (USEPA) and Ohio Environmental Protection Agency (OEPA) comments on the "Work Plan, Geotechnical Investigation of the Solid Waste Landfill and Proposed On-Site Waste Disposal Cell for Operable Unit 2", along with a copy of the revised Work Plan incorporating our response.

If you have any questions, please contact Behram Shroff at (513) 648-3148.

Sincerely,

Johnny Rasing

FN:Shroff

for Jack R. Craig
Fernald Remedial Action
Project Manager

Enclosures: As Stated

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cc w/enc:

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RESOLUTION OF OHIO EPA COMMENTS

WORK PLAN FOR GEOTECHNICAL SAMPLING AND TESTING,
SOLID WASTE LANDFILL AND ON-SITE WASTE DISPOSAL CELL
FOR OPERABLE UNIT 2

GENERAL COMMENTS

1. Commenting Organization: Ohio EPA Commentor: DDAGW

Comment: It is unclear to Ohio EPA as to what the full purpose of Task 2 is. If Task 2 is designed as a phase I investigation to determine what additional information is necessary in order to define site geology in regard to the acceptability of the area for the construction of a landfill, then it is acceptable. However, if Task 2 is designed to be a definitive investigation and is to be used as a final determination of site suitability and landfill design specifications, then it is unacceptable.

The Ohio EPA Division of Solid and Infectious Waste Management (DSIWM) has jurisdiction over all solid waste landfills in the state of Ohio. As such DOE should work with DSIWM in order to determine what is required by the state of Ohio in a solid waste landfill siting and construction work plan, and to help construct a work plan which satisfies the requirements as specified in OAC 3745-27-06, 3745-27-06, 3745-27-07, 3745-27-10.

Response: The proposed geotechnical investigation is being initiated in support of conceptual design studies required by DOE Order 4700.1 and has a predesign status (see text of Task 2, Section 1.1.). It is intended to identify fatal flaws that would preclude construction of a waste cell and provide engineering data for an enhanced cost estimate. It is not intended to be a definitive siting or design investigation. Should the disposal cell concept be subsequently identified as a preferred alternative as a result of the ongoing CERCLA process, then a work plan would be developed to define the more definitive investigation required to satisfy OAC 3745-27-06, 3745-27-06, 3745-27-07, and 3745-27-10; that work plan would be submitted for your approval.

Action: Replace the first paragraph of Task 2, Section 1.1, with the following:

The Work Plan for Operable Unit 2 (OU2) Geotechnical Sampling and Testing at the Proposed On-Site Waste Disposal Cell has been developed to implement conceptual design studies required by DOE Order 4700.1 and is not intended to be a definitive siting or design study. This investigation, hereinafter

called a Predesign Field Investigation (PFI), will include both geotechnical and environmental sampling. Laboratory analysis and data evaluation will be performed to support the PFI.

SPECIFIC COMMENTS

1. Commenting Organization: Ohio EPA Commentor: DDAGW

Comment: ~~Task 2, Section 3.1.1, Page 2-2, Paragraph 2.~~ The DOE will need more than 2 (two) borings in order to adequately characterize the zones between 25-75 feet.

Response: The two proposed borings, together with an additional well (2400) in the area were considered sufficient for a preliminary evaluation of the site. Should the disposal cell concept be subsequently identified as a preferred alternative as a result of the ongoing CERCLA process, these additional borings at the 25-75 foot depth would be implemented based on mutual agreement with the OEPA.

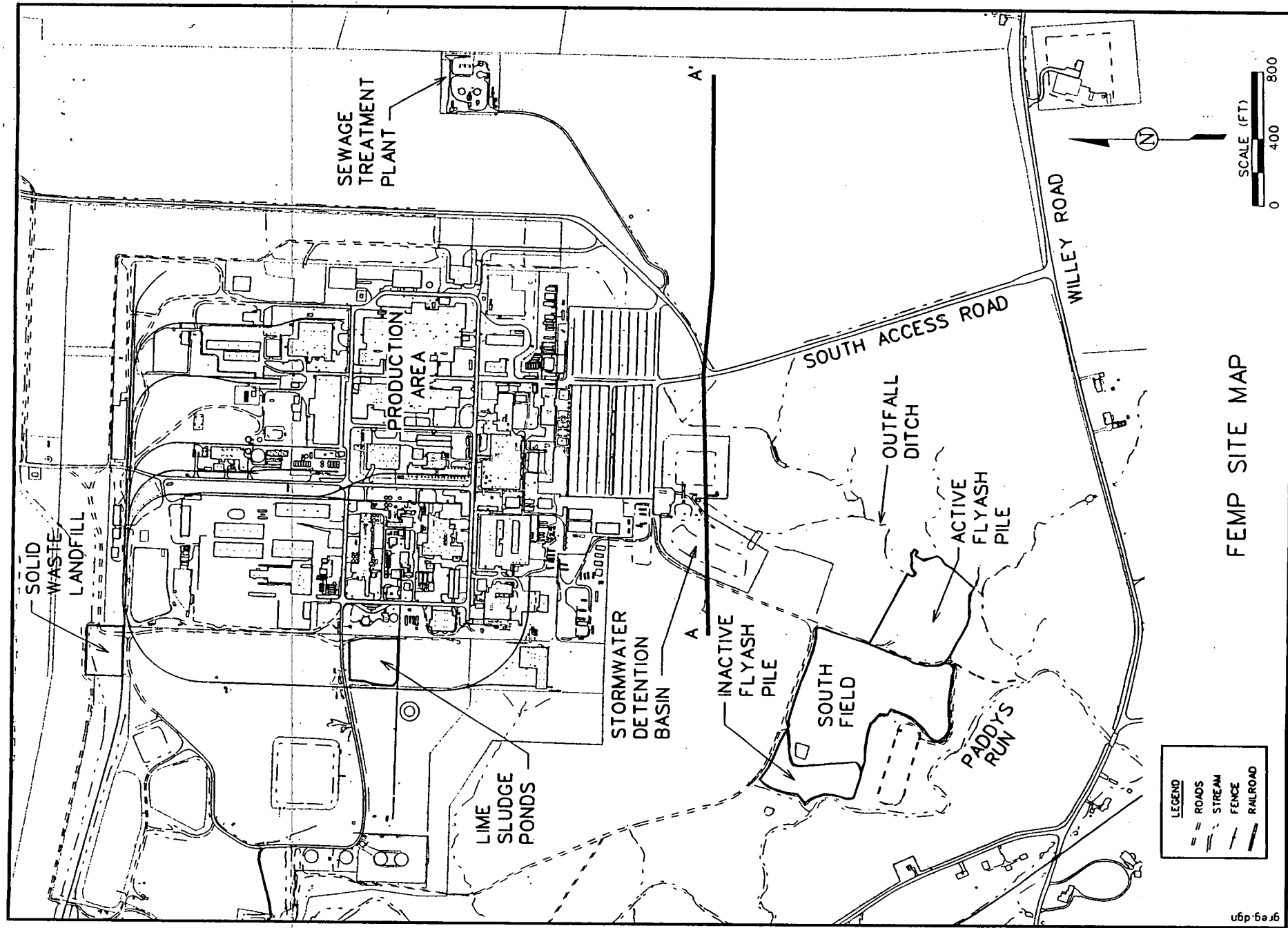
Action: No action required at this time.

2. Commenting Organization: Ohio EPA Commentor: DDAGW

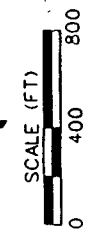
Comment: Task 2, Figure 1A. Thick sand deposits were encountered during the construction of the storm water retention basin. Where do these deposits terminate to the east, in relation to the proposed cell for OU-2 wastes?

Response: The lateral extent of the thick sand lens encountered in the stormwater retention basin terminates approximately 1200 feet west of the proposed disposal cell. The attached plan and cross-section show the extent of known sand deposits in the disposal cell area.

Action: No action required at this time.

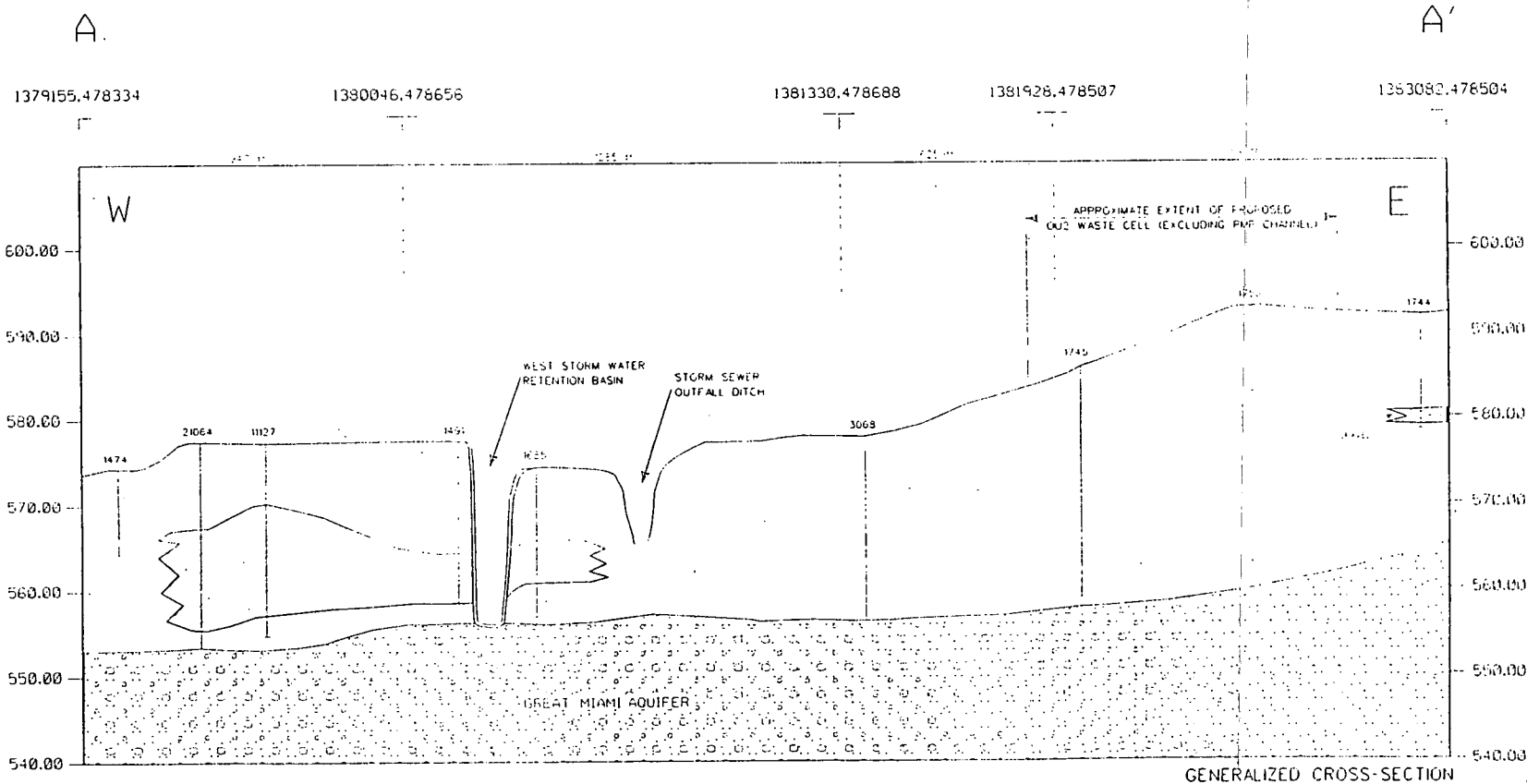


FEMP SITE MAP



LEGEND

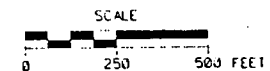
==	ROADS
---	STREAM
- - -	FENCE
---	RAILROAD



LEGEND:

1771 MONITORING WELL NUMBER / BORING NUMBER

	CLAY		GRAVEL
	SILT		SAND & GRAVEL
	SAND		UNDIFFERENTIATED GLACIAL OUTWASH



CONCEPTUAL CROSS-SECTION A-A'

19000000

LIN35-NEW LOG2

RESOLUTION OF U.S. EPA COMMENTS

WORK PLAN FOR GEOTECHNICAL SAMPLING AND TESTING,
SOLID WASTE LANDFILL AND ON-SITE WASTE DISPOSAL CELL
FOR OPERABLE UNIT 2

GENERAL COMMENTS

1. Commenting Organization: U.S. EPA Commentor: Saric

Comment: Section 1 states that the purpose of the geotechnical sampling is to collect information in order to design one of two remedial alternatives for the Solid Waste Landfill (SWL). These two alternatives are (1) excavation of localized areas in the SWL with high concentrations of radionuclides and capping of the SWL, and (2) removal of all waste in the SWL and disposal of select excavated material in an on-site Resource Conservation and Recovery Act (RCRA) type cell. The work plan should briefly describe the planned disposition of the materials to be excavated from localized areas under alternative 1, and should clarify what is meant by "high concentrations of radionuclides." The work plan should also explain what is meant by "select excavated material" under alternative 2 and what disposition is planned for the rest of the excavated material.

Response: One of the alternatives being evaluated in the ongoing conceptual design studies (Ref. DOE Order 4700.1) is the removal/treatment/disposal of material in the vicinity of Borings 1985, 11037 and 11039 with elevated U238 concentrations. For the conceptual design studies, working action levels of 60 to 100 pCi/g have been selected. This is consistent with the range of PRGs developed for U238 in the draft OU4 FS and is a reasonable "breakpoint" based on a frequency of occurrence analysis.

The conceptual design studies required to meet DOE Order 4700.1 are evaluating three alternatives as follows:

- "Hot spot" excavation and capping
- Closure and on-site disposal
- Closure and off-site disposal

In all cases, material with elevated U238 levels (greater than 60 to 100 pCi/g) are assumed to be disposed off site at NTS. For the closure cases, the remaining material (designated as "select excavated material") from the SWL would be disposed on site in the proposed OU2 on-site disposal cell or off site in an appropriate disposal cell or landfill.

It is expected that non-impacted soils will be excavated during remediation of the SWL in order to maintain safe slopes, and possibly for site grading, outside the confines of the original landfill disposal excavations. The extent of such excavations will be based on criteria estimated during the remedial design. These soils would be isolated and placed as a controlled backfill in the SWL excavation.

Action: Change Section 1.1., page 1-1, second and third paragraphs, to read:

- Alternative 1. Removal of impacted material by excavation within localized areas with elevated concentrations of radionuclides (i.e., above 60 to 100 pCi/g), as delineated by remedial investigations. This material is assumed to be transported off site for disposal at NTS. The local excavations will be backfilled with adjacent fill material, regraded and capped.
- Alternative 2. Removal of all fill and backfill of the pit to grade. Material with elevated concentrations of radionuclides will be disposed off site in the same manner as for Alternative 1. Select excavated materials which contain U238 concentrations less than the working action level of 60 to 100 pCi/g will be placed in an on-site disposal cell. The geotechnical exploration for the disposal cell is defined as Task 2 of this work plan. Non impacted natural soils that are excavated to achieve safe slopes or for site grading will be used for backfill.
- Alternative 3. Same approach for closure as Alternative 2, but with off-site disposal of select material in an appropriate cell or landfill.

2. Commenting Organization: U.S. EPA Commentor: Saric

Comment: Task 1 and Task 2 both propose environmental sampling and analyses. The objectives of the proposed environmental sampling are not presented in the work plan. The work plan should be revised to include the objectives of the proposed sampling and to discuss the manner in which the data will be used in the remedial design (RD).

Response: TASK 1 The objective for the Task 1 environmental sampling of the SWL is to further delineate areas with elevated concentrations of radionuclides detected by previous investigations. This information is necessary to further evaluate three remediation alternatives being evaluated in the Conceptual Design Studies being initiated in conformance with DOE Order 4700.1.

For Alternative 1, the additional environmental data will be used to more precisely define the location and geometry of the proposed local excavations. Similarly for Alternatives 2 or 3, the information will be used to delineate the location of material with elevated concentrations of U238 for off-site disposal. In all cases, the actual excavation limits will depend on verification of material characteristics by monitoring and testing as the remedial excavation proceeds.

TASK 2 The objective for the Task 2 environmental sampling of the planned disposal cell is to determine the potential existence of herbicides and pesticides. The information will be used in the conceptual design to evaluate the handling and use, or alternate disposal procedures for surficial soils. The intent is that the surficial soils would be used as topsoil during cell construction. It is desirable to know if past land use has resulted in accumulation of excessive amounts of chemicals warranting special construction procedures or limitations on the material use.

Action: TASK 1 Insert in Section 1.1, page 1-1 (following the revised paragraphs given above under General Comment 1):

"An environmental sampling program is planned to be performed in conjunction with the geotechnical field work to further delineate an area with elevated U238 concentrations identified by previous investigations. The results will be used, in conjunction with all previous information, in the conceptual design studies to define the excavation approach and layout, as well as material disposal requirements."

TASK 2 Insert in Section 1.1, page 2-1 after last paragraph:

"An environmental sampling program is planned to be performed in conjunction with the geotechnical field work to determine the potential existence of herbicides and pesticides. The information will be used to specify the handling and use of the surficial soils as intended for site restoration and topsoil application."

Specific Comments

1. Commenting Organization: U.S. EPA Commentor: Saric

Comment: Task 1, Section 2.2, Page 1-2, Paragraph 3 and Figure 1. The text states that the observed depth of the interface between the waste fill and undisturbed natural soil is indicated in Figure 1. However, Figure 1 does not clearly present this interface. Figure 1 should be revised to match the description in the text.

Response: The observed depth of the interface was indicated on Figure 1 by the values in parentheses below the boring names. However, these values were incorrectly noted in the legend as "Depth of Exploration."

Action: The Figure 1 legend has been revised to identify the depth of fill definitions at boring locations.

2. Commenting Organization: U.S. EPA Commentor: Saric

Comment: Task 1, Section 3.1.2, Page 1-4, Paragraph 2. General Comment No. 2 applies here and should be addressed.

Response: The response under General Comment No. 2 applies here.

Action: Insert at beginning of paragraph:

"The objective for the environmental field work will be to further delineate a previously detected area with elevated U238 content."

3. Commenting Organization: U.S. EPA Commentor: Saric

Comment: Task 1, Table 1. This table presents the depths of the proposed borings. The rationale for the proposed depths of borings G2-114, G2-115, and G2-116 is not clearly presented. The work plan should be revised to clearly present the rationale for these proposed depths.

Response: The depths of these proposed borings are based on the depth of the silt layer in the reference borings.

Action: Insert new note in Table 1 on page 1-8.

"(6) The designated boring depths for G2-114, -115, and -116 are based on the depth of the silt layer in the reference borings. Actual sampling depth shall be verified based on field classifications of the material encountered in the new borings."

4. Commenting Organization: U.S. EPA Commentor: Saric

Comment: Task 2, Page 2-3. The work plan contains two copies of Page 2-3. The only difference between the two pages involves the type of cement proposed for grouting the two 75-foot borings. The work plan should be revised to eliminate the inaccurate copy of Page 2-3.

Response: The current page should state "grout using C150 Class K Portland cement."

Action: The revised workplan issue contains only the correct page.

5. Commenting Organization: U.S. EPA Commentor: Saric

Comment: Task 2, Section 3.1.2, Page 2-3, Paragraph 6. General Comment No. 2 applies here and should be addressed.

Response: The objective for the environmental field work will be to obtain samples to determine potential accumulations of herbicide and pesticide chemicals in the surficial soils due to past farming practices at the site. This data will be used to determine the disposition of the material as top soil or general fill within the cell.

Action: Action under General Comment No. 2 applies here.